CLAIMS

1. A compound body comprising a steel base element on which is deposited a heater layer, characterized in that the base element is made of a precipitation hardening steel.

2. Compound body as claimed in claim 1, characterized in that the steel is a high alloy steel.

3. Compound body as claimed in claim 1, characterized in that the base element comprises a round or convex surface receiving the heater layer.

4. Compound body as claimed in one of claims 1, characterized in that the base element is tubular.

5. Compound body as claimed in one of claims 1, characterized in that the base element is a manifold or material feed tube of a hot duct system.

6. Compound body as claimed in one of claims 1, characterized in that the heater layer is a compound layer consisting of several strata and/or stratum elements.

7. Compound body as claimed in claim 6, characterized in that the heater layer comprises an insulating layer deposited on the base element.

8. Compound body as claimed in claim 7, characterized in that the insulation layer is a ceramic or a glass ceramic.

9. Compound body as claimed in claim 8, characterized in that the insulation layer consists of at least two individual strata.

10. Compound body as claimed in claim 7, characterized in that an array of resistance elements is configured on the insulation layer.

11. Compound body as claimed in claim 10, characterized in that the resistance elements are covered at least segment-wise by an insulating top coat.

12. Compound body as claimed in claim 10, characterized in that the insulating layer, further the resistance elements and/or the top coat are baked dispersions, for instance thick film pastes.

13. Compound body as claimed in claim 10, characterized in that the insulating layer, the resistance elements and/or the top coat are baked-on sheets.

14. Compound body as claimed in claim 6, characterized in that at least one temperature sensor is integrated into the plane of the heater layer.

15. Compound body as claimed in claim 6, characterized in that terminals for the resistance elements and/or the temperature sensors are integrated into the heater layer.

16. Application of a compound body as claimed in claim 1 as an externally heated material feed tube in a hot duct manifold and/or a hot duct nozzle.

17. A method for manufacturing a compound body comprising a steel base element on which is deposited a heater layer, in particular as claimed in claim 1, characterized in that pre-compression generated beforehand in the heating layer is reinforced by precipitation hardening the base element.

18. Method as claimed in claim 17, characterized in that each stratum or each stratum element of the heater layer is deposited on the base element, is dried and baked-on or formed and in that the compound body is cooled to room temperature following each baking procedure.

19. Method as claimed in claim 17, characterized in that the base element's steel alloy is homogenized or solution-annealed during the baking-on process.

20. Method as claimed in claim 17, characterized in that the bake-on temperature equals the temperature at which the base element is homogenized respectively solution annealed.

21. Method as claimed in claim 17, characterized in that the strata or strata elements of the heater layer are deposited using screen printing, or dispensers, by immersion or by spraying.

22. Method as claimed in claim 17, characterized in that each stratum respectively each stratum element is baked-on or formed under atmospheric air.

23. Method as claimed in claim 22, characterized in that the bake-on temperature is between 750 and 900°C.

24. Method as claimed in claim 17, characterized in that the base element's surface is roughened, illustratively by sandblasting, before the heater layer is deposited.

25. Method as claimed in claim 17, characterized in that the base element is cleaned and/or oxidized before the heater layer is deposited.

26. Method as claimed in claim 17, characterized in that the base element's steel alloy is age hardened by annealing after the heating layer has been deposited.

27. Method as claimed in claim 26, characterized in that the temperature of age hardening is lower than the bake-on temperature of the individual heater layer strata.

28. Method as claimed in claim 17, characterized in that age hardening is carried out in an atmosphere of air or nitrogen.